curvature of 10 to 60 times its diameter, a tensile strength TS (N/mm^2) of the steel wire satisfies following formula,

$TS \geq 2250-1450\log D$

wherein D is the diameter of the steel wire in mm and log means common logarithm,

and that repeated torsion value RT (turns/100D) of the steel wire, which is defined as sum of forward twisting and reverse twisting given until a crack is formed on a steel wire in a test wherein a steel wire is subjected to a repetition of forward twisting equivalent to 3 turns per 100D and reverse twisting to the original state with the axis of the steel wire kept straight, satisfies following formula;

$\log RT \geq 2-0.001\{TS-(2250-1450\log D)\}$.

2. (Amended) A steel wire according to claim 1, having tensile strength TS (N/mm^2) satisfying following formula,

$TS \geq 2750-1450\log D$.

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5. (Amended) A method of manufacturing a steel wire having a diameter ranging from 0.10mm to 0.40mm obtained by subjecting a high-carbon steel wire material having a carbon content ranging from 0.70% to 0.90% in weight to heat treatment and wire drawing, characterized in;

that tensile strength TS (N/mm^2) of the steel wire satisfies following formula,

$TS \geq 2250-1450\log D$

wherein D is the diameter of the steel wire in mm and log means common logarithm,

and that repeated torsion value RT (turns/100D) of the steel wire, which is defined as sum of forward twisting and reverse twisting given until a crack is formed on a steel wire in a test wherein a steel wire is subjected to a repetition of forward twisting equivalent to 3 turns per 100D and reverse twisting to the original state with the axis of the steel wire kept straight, satisfies following formula,

$\log RT \geq 2-0.001 \{TS-(2250-1450\log D)\}$

which comprises a step of drawing a high-carbon steel wire material after heat treatment, characterized in that the step of drawing is carried out according to following conditions;

① reduction per die is set from $(22.67 \varepsilon+3)\%$ to 29% for dies at which ε is less than 0.75,

② reduction per die is set from 20% to 29% for dies at which ε is not less than 0.75 and not more than 2.25,

③ reduction per die is set from $(-5.56 \varepsilon +32.5)\%$ to $(-6.22 \varepsilon +43)\%$ for dies at which ε is more than 2.25 except for the final die,

④ reduction per die is set from 4% to $(-8.3 \varepsilon+40.6)\%$ for the final die, and

⑤ ε at the final die is set from 3.0 to 4.3,

wherein ε is drawing strain expressed by a formula $\varepsilon = 2\ln(d_0/d)$, d_0 is diameter of the steel wire material in mm before drawing, d is diameter of the steel wire in mm after passing through a die, and ln means natural logarithm.